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The auditory comprehension of Who and Which questions in people with and without aphasia: Which account do the data support?

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This study investigated the comprehension of various types of *Wh*-questions in neurologically unimpaired adults and adults with Broca's aphasia. Evidence from linguistic and psycholinguistic literature suggests that *Which*-NP structures are more difficult to understand than *Who/What*-questions and within those, that object-extracted are more difficult than subject-extracted. Using a unique eye tracking-while listening method coupled with a three-figure picture, we examined four specific hypotheses regarding *Wh*-question comprehension: the Discourse hypothesis, the Retrieval Hypothesis, the Canonicity Hypothesis, and the Intervener Hypothesis. The "Discourse hypothesis" is supported by evidence that *Which*-NP questions are more difficult to process for neurologically healthy participants than *Who* questions because they must refer to an individual taken from a set of entities previously mentioned in the discourse (Donkers & Stowe, 2006; Shapiro, 2000). The "Retrieval hypothesis" makes the opposite claim; that because *Which*-NP constructions contain specific information that speeds memory retrieval, in relation to their *Who* question counterparts (Hofmeister, 2007). There is also evidence that across the two question types, object-extracted questions are more difficult to understand than subject-extracted questions because the former are in non-canonical word order. We call this the "Canonicity Hypothesis." Finally, the "Intervener hypothesis" claims that interveners can account for processing differences between *Who* and *Which*-NP questions (Friedmann & Novogrodsky, 2011). An intervener is an NP that has similar properties to other NPs in the sentence, and thus interferes with the assignment of thematic roles. Only *Which*-NP object-extracted questions contain an intervener, and this could explain why they have been found to be more difficult to process relative to other *Wh*-questions. We examined these four hypotheses using a unique eye tracking-while listening method coupled with a three-figure picture. Our initial results for our healthy controls revealed offline support for a Canonicity Hypothesis – where object-extracted who and which-NP questions took longer to resolve than subject-extracted versions (Figure 1.A). Our initial unimpaired gaze data results show the same pattern across all conditions with significantly more gazes to the correct than the incorrect referent (Figure 1.B). This sets the stage to compare the data from unimpaired participants to patients with Broca's aphasia. Our preliminary neurologically impaired data show only the which-object condition has accuracy that is not significantly different from chance (Figure 1.C). While, the impaired gaze data revealed the which-object condition had the lowest percentage of looks to the

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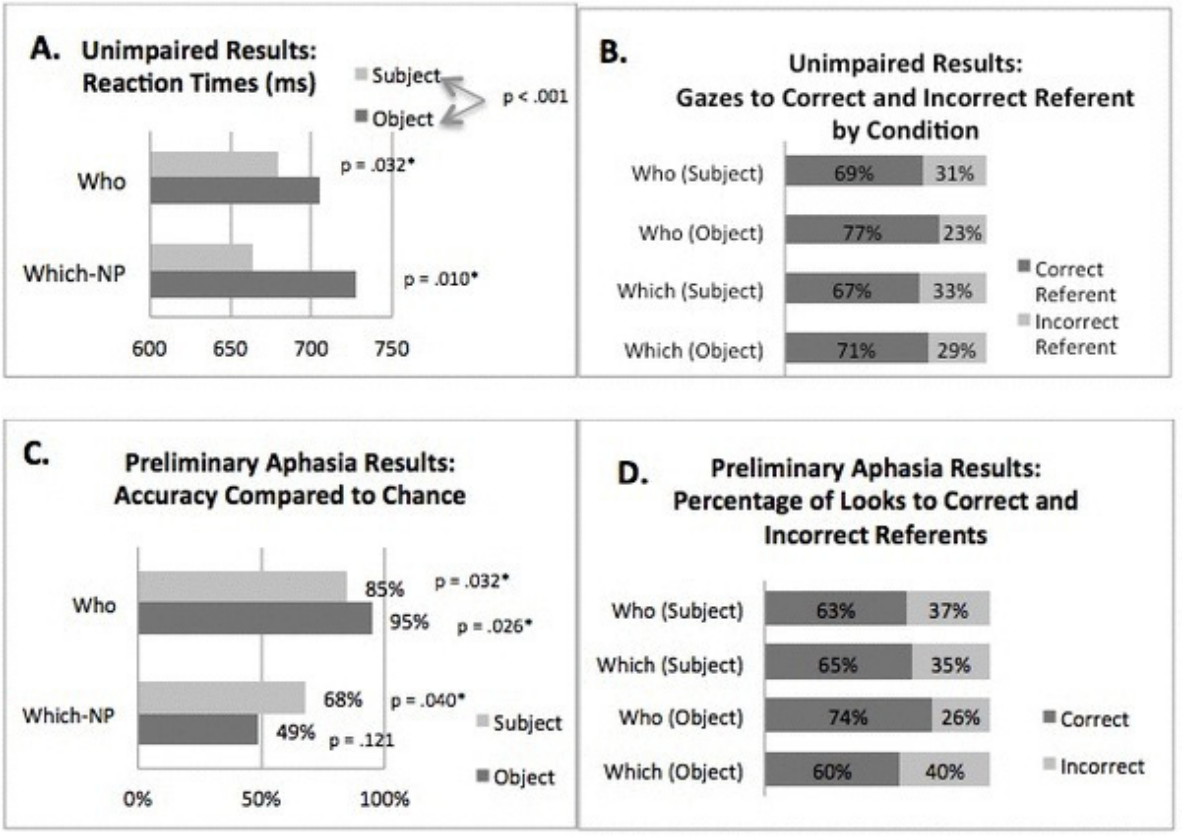
correct referent (Figure 1.D). These preliminary data are discussed in terms of different accounts of *Wh*-question comprehension.

Figure 1.



References

Donkers, J. & Stowe, L. (2006). Wh-questions and the nature of D-linking: A processing perspective. International Conference on Linguistic Evidence, University of Tübingen, Germany.

Friedmann, N., & Novogrodsky, R. (2011). Which questions are most difficult to understand: The comprehension of Wh questions in three types of SLI. *Lingua, 121,* 367-382.

Shapiro, L.P. (2000). The processing of long-distance dependencies in normal listeners: Evidence for form-driven activation. In R. Bastiannse & Y. Grodzinsky (Eds.), *Grammatical Disorders in Aphasia: A Neurolinguistic Perspective*. London: Whurr Publishers.